REMARKS

The provisional rejection of claims 1 and 7 based on claims 1, 5-7, 11 and 12 of copending application serial number 11/295,689 is incorrect because the effective filing date, for US purposes, of the present application is the PCT filing date of December 17, 2004, while the effective US filing date of the co-pending application is December 7, 2005. In addition, the present application relies on a December 18, 2003 French priority date, which antedates the December 8, 2004 French priority date of the co-pending application. As such, the claimed subject matter of the co-pending application is an improvement on the basic subject matter claimed in the present application. Based on the position taken by the examiner, any improvement application filed by the same inventor can be the basis for a double patenting rejection of the claims directed to a basic invention as submitted in a previously filed application. Attorney for applicant is unaware of any decision holding double patenting to be applicable in such a situation. The examiner is requested to cite a decision indicating that in the foregoing situation a double patenting rejection is proper.

Claim 7 has been amended to overcome the rejection based on 35 USC 101.

Applicant traverses the rejection of claims 1-4, 6 and 7 under 35 USC 102(b) as being anticipated by Luk et al., a publication entitled "Stochastic phonographic transduction for English" April 1996, pages 133-153. Luk uses stochastic phonographic transduction (SPT) to convert English letters into phonemes. Each word in the language L(G) is a string of letters that corresponds to a string of phonemes. The letters and phonemes of the word are aligned into terminals, i.e., letter-phoneme correspondences (figure 1).

Luk provides an interference algorithm having three passes for deriving the correspondences and transitions between the correspondences in each word (page 141).

In the first pass (section 4.1.1.), all the possible transitions are counted between all the possible single-letters to all the possible single-phoneme correspondences, i.e., for all possible alignments of each word. A table for each word enumerates the possible transitions between single-letter/single-phoneme pairs of the word (figure 2). Transition probabilities are estimated from these counts. A simple initial grammar is thus constructed

from these probabilities.

In the second pass (section 4.1.2.), a stochastic alignment for each word is determined on the basis of the simple initial grammar. The stochastic alignment for each cell C(i,j) of the transition table of each word is determined by a maximum likelihood p(i,j) of arriving at the cell depending on one of three possible preceding cells C(i-1,j), C(i,j-1) and C(i-1, j-1) (section 4.1.2, page 142, and figure 3). From this alignment, multi-letter to multi-phoneme correspondences are obtained and form the terminals.

In the third pass (section 4.1.3.), transition probabilities for the previous correspondences are estimated by frequency counts as in the first pass except that only transitions along the stochastic alignment found in the second pass are counted.

Luk, in the first pass, determines transition probabilities of single-letter/single-phoneme correspondences similar to the first probabilities $P(g_i|p_j)$ of elementary transcriptions according a general definition in claim 1.

Second probabilities of a given graphic chain CG with M graphic elements into a corresponding phonetic chain CP with N phonetic elements in claim 1 are determined according the following iterative formula for any pair m,n such that $1 \leq n \leq N$ and $1 \leq m \leq M$ (page 9, lines 19-24):

$P(g_1g_2\ldots g_m|p_1p_2\ldots p_n) = P(g_m|p_n) \max[P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_n, P(g_1g_2\ldots g_m|p_1p_2\ldots p_{n-1}),$
$P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_{n-1})]$.

Second probabilities are determined by MxN iterations of second probabilities of MxN second transcriptions of M graphic chains resulting from M successive concatenations of 1 to M graphic elements into N phonetic chains resulting from N successive concatenations of 1 to N phonetic elements. In the Luk pass 2, for a graphic chain (*make*, figure 2) with M=6 graphic elements that go into a corresponding phonetic chain CP (#,m,3i,k,#) with N=5 phonetic elements, there are 5x5(Type 1) + 4x6(Type 2) + 5x4(Type 3)=69 transition probabilities, such as p(i,j|i-1,j), p(i,j|i-1,j-1), p(i,j|i,j-1). In a similar situation, claim 1 would provide 6x5=30 second probabilities $P(g_1g_2\ldots g_m|p_1p_2\ldots p_n)$ applying on M successive concatenations of 1 to M graphic elements (1,2,3,…i; $i \leq M$; according to the Luk notations) into N phonetic chains (1,2,3,…j; $j \leq N$; according to the Luk notations) resulting from N successive concatenations.

Luk thus fails to include the claim 1 requirement for successive concatenations of 1 to M graphic elements and N successive concatenations of 1 to N phonetic elements and does not determine probabilities relating to the correspondences between these successive concatenations.

A second probability $P(g_1g_2\ldots g_m|p_1p_2\ldots p_n)$ is thus different from the probability $P(g_m|p_n)$, i.e., p(i,j) according to the Luk notation. The second probability in claim 1 relates to a correspondence between a graphic chain with M graphic elements and a phonetic chain with N phonetic elements and does not relate to a correspondence (i,j) between a graphic element i of a graphic chain (*make*) and a phonetic element j of a phonetic chain (#,m,el,k,#).

In Luk, the probability p(i,j) depends on the highest of three products of one of three elementary transcriptions probabilities p(i-1,j), p(i-1,j-1), p(i,j-1) and one of three probabilities p(i,j|i-1,j), p(i,j|i-1,j-1), p(i,j|i,j-1) which concern three transcriptions, each between two elementary transcriptions according to claim 1. Luk does not depend on the highest of three respective second probabilities which concern three successive concatenation transcriptions:

$P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_n)$, i.e., P(1,2,3,…i-1|1,2,3,…j) according to the Luke notations,
$P(g_1g_2\ldots g_m|p_1p_2\ldots p_{n-1})$, i.e., P(1,2,3,…i|1,2,3,…j-1) according to the Luk notations,
$P(g_1g_2\ldots g_{m-1}|p1p2\ldots p_{n-1})$ i.e., P(1,2,3,…i-1|1,2,3,…j-1) according to the Luk notations,
as determined by preceding iterations.

Luk fails to determine the three above successive concatenation transcriptions and does not determine a second probability of a second transcription $(g_1g_2\ldots g_m|p_1p_2\ldots p_n)$ or 1,2,3,…i|1,2,3,…j) depending on four probabilities: one preceding estimate first probability $P(g_m|p_n)$, i.e., p(i,j), of last graphic and phonetic element of said second transcription and three respective second probabilities:

$P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_n)$,
$P(g_1g_2\ldots g_m|p_1p_2\ldots p_{n-1})$,
$P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_{n-1})$
as determined by preceding iterations.

The allegation that Section 4.1.2. Pass 2, more particularly the equation for p(i,j),

and Fig. 3 of Luk anticipates the fourth paragraph of claim 1 is incorrect, as discussed above. Consequently, the rejection of claim 1 is incorrect.

Therefore, Luk does not anticipate the last step of claim 1 that relates to establishing and storing a link between the last elements of the graphic chain and the phonetic chain of each second transcription and the last elements of the graphic chain and the phonetic chain of the transcription that relates to the highest of the three respective second probabilities and that depends on three respective second probabilities.

Claim 7 is allowable for the same reasons discussed in connection with claim 1.

Claims 2-6 depend on claim 1 and are allowable with claim 1. In addition, claims 2-4 are directed to more precise determinations of the second probabilities and obviously are not disclosed by Luk. In this regard, the attention of the examiner is directed to the definition of the probability p(i,j) at the bottom of page 142 of the Luk reference.

Allowance is in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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